UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,114	06/20/2001	Bruno Bessette	4082-0129P	3008

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EXAMINER
ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/830,114	BESSETTE ET AL.
	Examiner	Art Unit
	Angela A. Armstrong	2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 June 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-63</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-4,7,9-13,16,18-22,25,27-31,34,36-40,43,45-49,52,54-58,61 and 63</u> is/are rejected.

7)☒ Claim(s) <u>5,6,8,14,15,17,23,24,26,32,33,35,41,42,44,50,51,53,59,60 and 62</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>4/24/01;9/13/01;8/03/04</u>

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.   Claims 1, 3, 7, 10, 12, 16, 19, 21, and 25 are rejected under 35 U.S.C. 102(b) as being

anticipated by Lin (US Patent No. 5,621,852).

2.   Regarding claims 1 and 10, Lin discloses an efficient codebook structure for code excited

linear prediction coding and provides support for a pitch analysis device for producing an

optimal set of pitch codebook parameters, comprising: a) at Least two signal paths associated to

respective sets of pitch codebook parameters (binary codebook 1 and binary codebook 2),

wherein: i) each signal path comprises a pitch prediction error calculating device for calculating

a pitch predictor error of a pitch codevector from a pitch codebook search device(Figure 3 and

4); and ii) at Least one of said two paths comprises a filter for filtering the pitch codevector

before supplying said pitch codevector to the pitch prediction error calculating device of said one

path (50,68, 74, 84); and b) a selector for comparing the pitch prediction errors calculated in said

at Least two signal paths, for choosing the signal path having the Lowest calculated pitch

prediction error, and for selecting the set of pitch codebook parameters associated to the chosen

signal path (Figure 3, 4).

Regarding claims 3 and 12, Lin discloses signal paths comprises a plurality of signal paths each provided with a filter for filtering the pitch codevector before supplying said pitch codevector to the pitch prediction error calculating device of the same path (50,68, 74, 84).

Regarding claims 7 and 16, Lin discloses pitch prediction error calculating device of each signal path comprises means for calculating an energy of the corresponding pitch prediction error, and wherein said selector comprises means for comparing the energies of said pitch prediction errors of the different signal paths and for choosing as the signal path having the lowest calculated pitch prediction error the signal path having the Lowest calculated energy of the pitch prediction error (Figure 3, 4).

Regarding claim 19, Lin discloses an encoder (Figure 1) having a pitch analysis device as in claim 1 (figure 3, 4) for encoding a wideband input signal, said encoder comprising: a) a Linear prediction synthesis filter (26) calculator responsive to the wideband signal for producing Linear prediction synthesis filter coefficients; b) a perceptual weighting filter (12), responsive to the wideband signal and the Linear prediction synthesis filter coefficients, for producing a perceptually weighted signal', c) an impulse response generator responsive to said Linear prediction synthesis filter coefficients for producing a weighted synthesis filter impulse response signal (16, 22); d) a pitch search unit for producing pitch codebook parameters, said pitch search unit comprising: i) said pitch codebook search device responsive to the perceptually weighted signal and the linear prediction synthesis filter coefficients for producing the pitch codevector and an innovative search target vector (18); and ii) said pitch analysis device responsive to the pitch codevector for selecting, from said sets of pitch codebook parameters, the set of pitch codebook parameters associated to the path having the Lowest calculated pitch prediction error

(18,24); d) an innovative codebook search device, responsive to the weighted synthesis filter impulse response signal, and the innovative search target vector, for producing innovative codebook parameters (18,24); and e) a signal forming device for producing an encoded wideband signal comprising the set of pitch codebook parameters associated to the path having the Lowest pitch prediction error, said innovative codebook parameters, and said Linear prediction synthesis filter coefficients (30).

Regarding claim 21, Lin discloses signal paths comprises a plurality of signal paths each provided with a filter for filtering the pitch codevector before supplying said pitch codevector to the pitch prediction error calculating device of the same path (50,68, 74, 84).

Regarding claim 25, Lin discloses pitch prediction error calculating device of each signal path comprises means for calculating an energy of the corresponding pitch prediction error, and wherein said selector comprises means for comparing the energies of said pitch prediction errors of the different signal paths and for choosing as the signal path having the lowest calculated pitch prediction error the signal path having the Lowest calculated energy of the pitch prediction error (Figure 3, 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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3.   Claims 2, 4, 9, 11, 13, 18, 20, 22, 27, 28-31, 34, 36, 37-40, 43, 45, 46-49, 52, 54, 55-58,

61, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Adoul

(US Patent No. 5,754,976).

4.   Regarding claim 28, Lin does not teach the specifics of an environment for using the

CELP encoding technique to include a cellular communication system. However, implementing

a CELP coding technique in the cellular communication environment was well known in the art,

as evidenced by Adoul.   Adoul teaches implementation of the CELP encoder in a cellular

communication system for servicing a large geographical area divided into a plurality of cells,

comprising, mobile portable transmitter/receiver units, cellular base stations respectively situated

in the cells, means for controlling communication between the cellular base station, a

bidirectional wireless communication sub-system between each mobile unit (col. 3, lines 31-48).

Adoul specifically teaches the advantages of using a CELP encoder in the wireless

communication/telecommunications platform so as to realize the good quality/bit rate tradeoff

associated with the CELP coder. It would have been obvious to one of ordinary skill at the time

of the invention to modify the system of Lin to provide for implementation in a wireless

platform, as suggested by Adoul, so as to provide the improved encoding of Lin in a wireless

environment.

        Regarding claim 29, Lin discloses, one of the paths comprises no filter for filtering the

pitch codevector (figure 5, 103).

        Regarding claims 30, 31, and 36 Lin discloses Lin discloses signal paths comprises a

plurality of signal paths each provided with a filter for filtering the pitch codevector before

supplying said pitch codevector to the pitch prediction error calculating device of the same path (50,68, 74, 84).

Regarding claim 34, Lin discloses pitch prediction error calculating device of each signal path comprises means for calculating an energy of the corresponding pitch prediction error, and wherein said selector comprises means for comparing the energies of said pitch prediction errors of the different signal paths and for choosing as the signal path having the lowest calculated pitch prediction error the signal path having the Lowest calculated energy of the pitch prediction error (Figure 3, 4).

Regarding claims 2, 4, 9, 11, 13, 18, 20, 22, 27, 37-40, 43, 45, 46-49, 52, 54, 55-58, 61, and 63, claims 2, 4, 9, 11, 13, 18, 20, 22, 27, 37-40, 43, 45, 46-49, 52, 54, 55-58, 61, and 63 are similar in scope and content to claims 1, 3, 7, 28-31 and 34-36, and are therefore rejected under similar rationale.
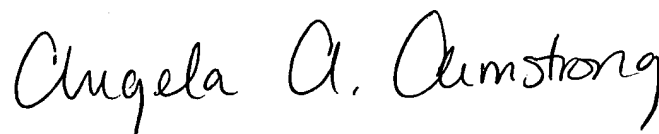
Allowable Subject Matter

5.   Claims 5-6, 8, 14-15, 17, 23-24, 26, 32-33, 35, 41-42, 44, 50-51, 53, 59-60, and 62 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 571-272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Angela A Armstrong
Examiner
Art Unit 2654

AAA
June 27, 2005